



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/707,909

01/23/2004

Donald H. Wiseman

PIL8015.011

1908

26629

7590

07/17/2006

ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (ZPS)  
14135 NORTH CEDARBURG ROAD  
MEQUON, WI 53097

EXAMINER

KUNEMUND, ROBERT M

ART UNIT

PAPER NUMBER

1722

DATE MAILED: 07/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES PATENT AND TRADEMARK OFFICE

---

Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

**MAILED**

JUL 17 2006

Application Number: 10/707,909  
Filing Date: January 23, 2004  
Appellant(s): WISEMAN, DONALD H.

**GROUP 1700**

---

Kirk Deheck  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed August 15, 2005 appealing from the Office action mailed March 17, 2005.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,461,215	Haldeman	10-1995
6,117,230	Ammon et al	9-2000

**(9) Grounds of Rejection**

Art Unit: 1722

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 9 to 11, 16 to 18 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable by Haldeman (5,461,215) in view of Ammon et al (6,117,230).

The Haldeman reference teaches an induction-heating coil in a crystal growth apparatus. The crystal growth apparatus has a means to receive a material for growth, which is to be heated. The heating means is an induction coil, note col. 1 lines 1-20. The induction means is a Litz coil, note col. 3 lines 2-55. The coils are cooled by water, which is allowed to flow through the Litz coil, note, and cite supra. The coils are in casings, which has two separate ends. The coils are insulated for each other note col. 4. The sole difference between the instant claims and the prior art is the housing means. However, the Ammon et al reference teaches a czochralski apparatus where there is a housing the surrounds the heating coils, note, figs. It would have been obvious to one of ordinary skill in the art to modify the Haldeman reference by the teachings of the Ammon et al reference to include a housing in order to prevent the heater from deforming and creating impurities in the process.

Claims 3, 5 to 8, 12 to 15 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Haldeman in view of Ammon et al .

The Haldeman and Ammon et al references are relied on for the same reasons as stated, supra, and differ from the instant claims in the construction of the coil. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine the optimum, operable means of construction, such as controllers, encasements, tie downs in the Haldeman reference in order to protect

Art Unit: 1722

the coils during growth and secure the coils so that the coils do not cause vibrations during the growth which would ruin the crystals.

Claims 4 and 21-28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Haldeman in view of Ammon et al.

The Haldeman and Ammon references are relied on for the same reasons as stated, supra, and differ from the instant claims in the method of growth. However, in the absence of unexpected results, it would have been obvious to one of ordinary skill in the art to determine the optimum, operable means of growth which best use the Litz coils in the Haldeman reference in order to decrease energy use in the crystal growing methods. Further, the efficiency of the coils would inherently be similar as there is seen no difference between the Litz coils of the claims and the prior art.

#### **(10) Response to Argument**

Appellants' argument concerning motivation to reject claim one is noted. The Halderman reference clearly teaches that a Litz coil heater has many advantages over normal coil heaters. The reference teaches that the Litz coil can be used to replace standard RF heaters and be used in semiconducting industry and crystal growth process. The reference itself, not the examiner provides a clear reason for motivation to combine references. Thus, the reference clearly sets forth a line of reasoning to one of ordinary skill in the art to replace a normal coil heater with a Litz coil heating means. The examiner has stayed within the guidelines set forth in the cited case law of appellants. There does exist from the art a clear line of reasoning and motivation to combine. The Litz coil is cleaner and more efficient at heating.

Art Unit: 1722

Appellants' argument concerning a teaching away has been considered and not deemed persuasive. The Halderman reference is merely teaching that a Litz coil can be made of various shapes and sizes. The reference is showing that this heater can be made to wrap around many various materials and of differing shapes. The reference is not teachings away from the present invention as argued. The reference at no point teaches or suggests that the Litz coils change shape during heating and or not stable. This is simply not the case. The Halderman reference teaches that the coil can be made of different materials. Thus, the Litz coil will remain the same shape and be usable in a seed pulling apparatus. It is duly noted, that appellants have not shown that the instantly claimed Litz coil heater be any different in material or shape then that claimed. Hence, the heater of the prior art must inherently act the same way as claimed, which is known to one of ordinary skill in the art.

Appellants' argument concerning the placement of the heater is noted. However, the Halderman cite, that appellant supplies teach "can be". This does not mean that the reference is limited in scope as argued to an outside heater. Also, the claim is rejected over a combination of references. The Ammon et al reference clearly shows the heaters to be inside in a czochralski or seed pulling apparatus.

As shown above the examiner has provided a clear and clean line of motivation to combine references and meet the claims. Appellants are unduly limiting the teachings of the Halderman reference to try to overcome the rejection. The combination of references teaches a seed pulling apparatus, which is enclosed, with Litz coil heaters inside, this is allowed by Halderman, and taught by Ammon et al.

Appellants' argument concerning the teachings as a whole has been considered and not deemed persuasive. The examiner has considered the entire body of teachings in the case. The examiner has stayed within the guidelines of the cited case law again by appellants. However, appellants have continuously argued to limit teachings of the references and are not following their own case law citations. For example, the Halderman reference teaches the heaters can be outside. The words can be do not limit the reference nor exclude inside. However, appellants argue that it does, clearly, not considering the entire teachings of the reference.

Appellants' argument concerning that the modification will not work is noted. However, again, appellants limit the teachings of the Halderman to outside only, again this is not the case. Further, Ammon et al teaches that the heater to be inside a chamber. Seed pulling or czochralski method is all preformed inside a chamber. There is no crystal growth without a chamber due to harmful gases and impurities. Therefore, the combination does not destroy any teachings of the prior art.

Appellants' argument concerning the heater arrangement is noted. However, claim one is not limited to any shape or placement of the heater. The prior art does teach the limitations of claim one.

Appellants' argument concerning claim 6 and 7 has been considered and not deemed persuasive. The limitation of claim six is merely a means to allow for support of and connection to the heater. Clearly, it would have been well within the skill of the art to include means in the prior art to support and connect to the heaters. One of ordinary

Art Unit: 1722

skill in the art would recognize that there must be means to support and connect the heaters shown in the drawings of the references.

Appellants' argument concerning claim 9 is noted. Appellant argues the heater of the Ammon et al reference. However, the combination of references, which is applied against the claims, uses the heater of Halderman. Appellants are picking and choosing different parts of the references and not the combination. Clearly, a different heater would not have the exact same set up as set forth in Ammon et al. One of ordinary skill in the art would change and know to change the heater set up like the supports in order for the Litz coil heater to work properly.

Appellants' argument concerning claim 12 is noted. However, the limitation is merely a means to support the heater. It is well within the skill of the art to use different means to support the heater. There is no showing that this is outside the skill of the art.

Appellants' argument concerning claims 13 and 14 has been considered and not deemed persuasive. In the art of seed pulling the use of housing or casings is well known. Therefore, it would have been obvious to make changes to the casing and housing of the combination of references in order to properly house, support and connect the Litz coil heater in a seed puller.

Appellants' argument concerning claim 17 is noted. However, the claim merely recites attaching a leg to a Litz coil after forming the heater. The combination of references teaches the seed puller, coiling the heater around the subject to be heated. The Ammon reference teaches that the heater is supported and connected to the power means. From the diagram of Halderman there are means to connect the heaters. The



Art Unit: 1722

Halderman reference teaches that the heater remains in the same shape as coiled. It would have been obvious to one of ordinary skill in the art to attach a leg for stability. Also, one of ordinary skill in the art is not going to want to have a heater, which moves during the process. This could and would lead to the growth of bad crystals.

Appellants' argument concerning claim 21 is noted. However, as shown above one of ordinary skill in the art is simply not going to use a heater that moves. The Halderman reference does not teach that the heater moves, uncoils during use. This simply does not happen. The combination of references teaches a Litz coil heater in a seed puller with a housing around everything including the heater.

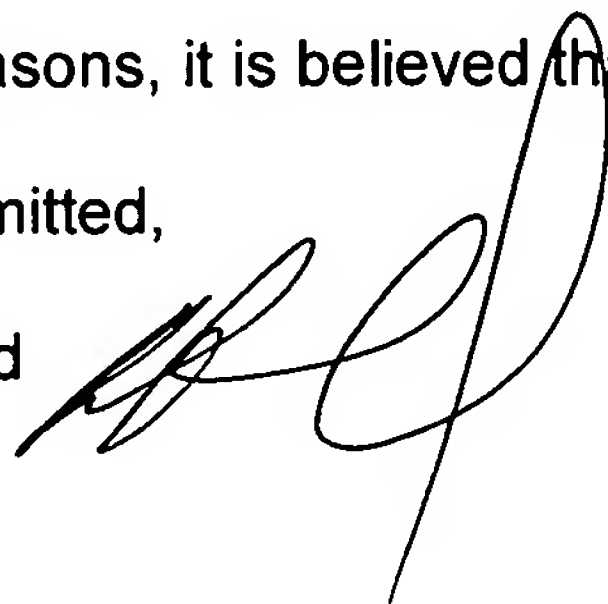
**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

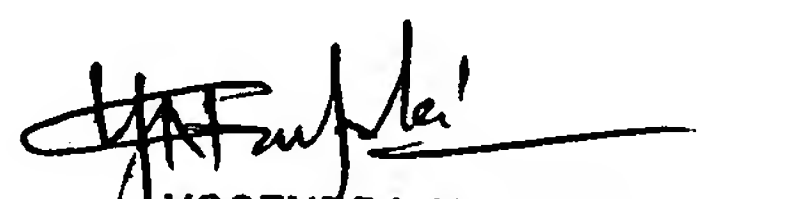
Robert Kunemund



Conferees:

Dr. Gupta

SPE 1722



YOGENDRA N. GUPTA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

~~Mr. Colakowski~~

SPE 1734



DUANE SMITH  
SUPERVISORY PATENT EXAMINER

Application/Control Number: 10/707,909  
Art Unit: 1722

Page 9